



[4910-13-P]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2015-3986; Directorate Identifier 2015-NM-057-AD; Amendment 39-18613; AD 2016-16-15]**

**RIN 2120-AA64**

**Airworthiness Directives; Bombardier, Inc. Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule.

**SUMMARY:** We are adopting a new airworthiness directive (AD) for certain Bombardier, Inc. Model DHC-8-400, -401, and -402 airplanes. This AD was prompted by reports of chafing damage due to insufficient clearance on the main landing gear (MLG) stabilizer brace, the nacelle A-frame structure, and the adjacent electrical wiring harnesses. An insufficient fillet radius may also exist on certain airplanes. This AD requires, depending on airplane configuration, an inspection of the nacelle A-frame structure for insufficient fillet radius; an inspection for cracking of affected structure, and rework or repair if necessary, and rework of the nacelle A-frame structure; repetitive inspections of the nacelle A-frame structure and the MLG stabilizer brace for insufficient clearance and damage, and repair if necessary, and rework of the nacelle A-frame structure, which would terminate the repetitive inspections; installation of new stop brackets and a shim on each MLG stabilizer brace assembly; and rework of the electrical wiring harnesses in the nacelle area. We are issuing this AD to detect and correct chafing

damage and subsequent premature cracking and fracture of the nacelle A-frame structure, which could result in failure of the MLG stabilizer brace and loss of the MLG down-lock indication, which could adversely affect the safe landing of the airplane.

**DATES:** This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** For Bombardier service information identified in this final rule, contact Bombardier, Inc., Q-Series Technical Help Desk, 123 Garratt Boulevard, Toronto, Ontario M3K 1Y5, Canada; telephone 416-375-4000; fax 416-375-4539; email [thd.qseries@aero.bombardier.com](mailto:thd.qseries@aero.bombardier.com); Internet <http://www.bombardier.com>. For Goodrich service information identified in this AD, contact Goodrich Corporation, Landing Gear, 1400 South Service Road, West Oakville, ON, Canada L6L 5Y7; phone: 905-825-1568; email: [jean.breed@goodrich.com](mailto:jean.breed@goodrich.com); Internet: <http://www.goodrich.com/TechPubs>. You may view this referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221. It is also available on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2015-3986.

### **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov> by

searching for and locating Docket No. FAA-2015-3986; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (telephone 800-647-5527) is Docket Management Facility, U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

**FOR FURTHER INFORMATION CONTACT:** Aziz Ahmed, Aerospace Engineer, Airframe and Mechanical Systems Branch, ANE-171, FAA, New York Aircraft Certification Office, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7329; fax 516-794-5531.

**SUPPLEMENTARY INFORMATION:**

**Discussion**

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to certain Bombardier, Inc. Model DHC-8-400, -401, and -402 airplanes. The NPRM published in the Federal Register on October 19, 2015 (80 FR 63147) (“the NPRM”). The NPRM was prompted by reports of chafing damage due to insufficient clearance on the MLG stabilizer brace, the nacelle A-frame structure, and the adjacent electrical wiring harnesses. An insufficient fillet radius may also exist on certain airplanes. The NPRM proposed to require, depending on airplane configuration, an inspection of the nacelle A-frame structure for insufficient fillet radius; an inspection for cracking of affected structure, and rework or repair if necessary, and rework of the

nacelle A-frame structure; repetitive inspections of the nacelle A-frame structure and the MLG stabilizer brace for insufficient clearance and damage, and repair if necessary, and rework of the nacelle A-frame structure, which would terminate the repetitive inspections; installation of new stop brackets and a shim on each MLG stabilizer brace assembly; and rework of the electrical wiring harnesses in the nacelle area. We are issuing this AD to detect and correct chafing damage and subsequent premature cracking and fracture of the nacelle A-frame structure, which could result in failure of the MLG stabilizer brace and loss of the MLG down-lock indication, which could adversely affect the safe landing of the airplane.

Transport Canada Civil Aviation (TCCA), which is the aviation authority for Canada, has issued Canadian Airworthiness Directive CF-2014-45, dated December 23, 2014 (referred to after this as the Mandatory Continuing Airworthiness Information, or “the MCAI”), to correct an unsafe condition on certain Bombardier, Inc. Model DHC-8-400, -401, and -402 airplanes. The MCAI states:

The aeroplane manufacturer has discovered that an insufficient fillet radius may exist on the flange of the nacelle A-frame structure on certain aeroplanes. There have also been several in-service reports of chafing damage on the main landing gear (MLG) stabilizer brace, the nacelle A-frame structure and its adjacent electrical wiring harnesses due to insufficient clearance.

An insufficient fillet radius and chafing damage on the nacelle A-frame structure and MLG stabilizer brace could lead to premature cracking. Fracture of the nacelle A-frame structure or failure of the MLG stabilizer brace could adversely affect the safe landing of the aeroplane. The damage to the electrical wiring harnesses could result in the loss of the MLG downlock indication.

This [Canadian] AD mandates the inspection and rework of the nacelle A-frame structure, and the rework of the forward MLG stabilizer brace assembly and the electrical harnesses in the nacelle area adjacent to the A-frame structure.

The following actions are required, depending on airplane configuration.

- A detailed inspection of the nacelle A-frame structure for insufficient fillet radius, an eddy current or fluorescent dye penetrant inspection for cracking of affected structure, and rework or repair if necessary.
- Rework of the left-hand (LH) side and right-hand (RH) side nacelle A-frame structure, including doing a measurement of the clearance between the fasteners/A-frame structure and MLG stabilizer brace assembly and making sure no fouling condition exists, and repair if necessary.
- Repetitive detailed inspections of the nacelle A-frame structure and the MLG stabilizer brace for insufficient clearance and damage, and repair if necessary.
- Rework of the nacelle A-frame structure, including a measurement of the clearance between the A-frame structure and MLG stabilizer brace assembly, and a fluorescent dye penetrant inspection or high frequency eddy current inspection for cracking and repair if necessary, which would terminate the repetitive inspections.
- Installation of new stop brackets and a shim on each MLG stabilizer brace assembly.
- Rework of the electrical wiring harnesses in the nacelle area. The rework includes a detailed inspection of the conduit assembly for certain conditions and repair if any condition is found, replacement of damaged conduit, a measurement of the clearance

between the stabilizer brace and electrical harness on both LH and RH nacelles to make sure there is 0.100 inch (2.54 millimeters (mm)) minimum clearance between the MLG stabilizer brace, and a check for damage on the A-frame structure and MLG stabilizer brace and repair if necessary.

You may examine the MCAI in the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2015-3986.

### **Comments**

We gave the public the opportunity to participate in developing this AD. The following presents the comments received on the NPRM and the FAA's response to each comment.

### **Request to Incorporate Revised Service Information and Provide Credit**

Horizon Air asked that the following revised service information be included in the proposed AD for the applicable actions:

- Bombardier Service Bulletin 84-54-20, Revision C, dated March 5, 2015.
- Bombardier Service Bulletin 84-32-112, Revision C, dated April 2, 2015.
- Bombardier Service Bulletin 84-32-114, Revision B, dated February 3, 2015.
- Goodrich Service Bulletin 46400-32-102 R2, Revision 2, dated February 17, 2015.

Horizon Air pointed out that several of the service documents specified in the proposed AD have been updated, and asserted that the proposed AD should be revised to reference the updated service information. Horizon Air also asked that credit be given for actions done using the previous revisions of the revised service information.

We agree with the commenter's requests. No new work is specified by the revised service information; therefore, we have revised the "Related Service Information under 1 CFR part 51" section and the applicable requirements of this AD to refer to the updated service information. We have also revised paragraph (m) of this AD to provide credit for certain actions required by this AD, if those actions were performed before the effective date of this AD using earlier revisions of the service information identified previously.

#### **Request to Omit Job Set-up and Close Out Actions**

Horizon Air asked that we not mandate the "Job Set-up" and "Close Out" sections of the Accomplishment Instructions of certain service information referenced in the NPRM. Horizon Air stated that these instructions do not directly correct the unsafe condition, but they do restrict an operator's ability to perform other maintenance in conjunction with the instructions that correct the unsafe condition. Horizon Air added that only the section in the Accomplishment Instructions that directly corrects the unsafe condition should be required.

We agree with the commenter's request to exclude the "Job Set-up" and "Close Out" sections of the Accomplishment Instructions of certain service information identified in this AD. Paragraphs (g), (h), (i), and (j) of this AD already identify the specific sections of the Accomplishment Instructions of the applicable service information for doing only the actions that directly address the unsafe condition; therefore, there are no changes necessary in those paragraphs in this regard. However, we have revised paragraph (k) of this AD to specify doing only the actions provided in "Part B – Procedure," of the Accomplishment Instructions of Bombardier Service

Bulletin 84-32-114, Revision B, dated February 3, 2015, for the required actions specified in that paragraph.

### **Request to Clarify a Certain Reference**

Horizon Air asked that we revise the paragraph references in paragraph (l)(1) of the proposed AD for clarity. Horizon Air stated that paragraph (l)(1) of the proposed AD refers to Bombardier ModSum IS4Q5450002, Revision B, dated June 22, 2012, as acceptable for compliance with the actions specified in paragraph (g) of the proposed AD. Horizon Air noted that for greater clarity, the reference should be to paragraph (g)(2) of the proposed AD.

We agree with the commenter's request for the reasons provided. We have changed paragraph (l)(1) of this AD to specify that installing specified fasteners on the MLG A-frame, in both LH and RH nacelles, in accordance with Bombardier ModSum IS4Q5450002, Revision B, dated June 22, 2012, is acceptable for compliance with the actions specified in paragraph (g)(2) of this AD.

### **Conclusion**

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting this AD with the changes described previously and minor editorial changes. We have determined that these minor changes:

- Are consistent with the intent that was proposed in the NPRM for correcting the unsafe condition; and



- Do not add any additional burden upon the public than was already proposed in the NPRM.

We also determined that these changes will not increase the economic burden on any operator or increase the scope of this AD.

#### **Related Service Information under 1 CFR part 51**

Bombardier has issued the following service information.

- ModSum IS4Q2400028, Revision B, dated December 11, 2012; and ModSum IS4Q2400029, Revision A, dated July 6, 2012. These modsums describe procedures for rerouting certain electrical harnesses and installing grommets.
- ModSum IS4Q5450002, Revision B, dated June 22, 2012. This modsum describes procedures for installing specified fasteners on the MLG A-frame, in both the LH and RH nacelles.
- ModSum IS4Q5450003, Revision C, dated November 29, 2012. This modsum describes procedures for trimming the horizontal and vertical stiffeners on the MLG A frame in both the LH and RH nacelles.
- Service Bulletin 84-32-112, Revision C, dated April 2, 2015. This service information describes procedures for incorporating Bombardier ModSum 4-902416 by installing new stop brackets and new stop shims for all MLG stabilizer brace assemblies.
- Service Bulletin 84-32-114, Revision B, dated February 3, 2015. This service information describes procedures for rework of the electrical wiring harnesses in the nacelle area. The rework includes a detailed inspection of the conduit assembly for certain conditions, and repair, replacement of damaged conduit, a measurement of the

clearance to make sure there is 0.100 inch (2.54 mm) minimum clearance between the MLG stabilizer brace, and a check for damage on the A-frame structure and MLG stabilizer brace and repair.

- Service Bulletin 84-54-19, dated April 18, 2013. This service information describes procedures for detailed inspections of the nacelle A-frame structure for insufficient fillet radius, an eddy current or fluorescent dye penetrant inspection for cracking of affected structure, and rework or repair.

- Service Bulletin 84-54-20, Revision C, dated March 5, 2015. This service information describes procedures for detailed inspections of the nacelle A-frame structure and the MLG stabilizer brace for insufficient clearance and damage, and repair. This service information also describes procedures for rework of the nacelle A-frame structure, including a measurement of the clearance between the A-frame structure and MLG stabilizer brace assembly, and a fluorescent dye penetrant inspection or high frequency eddy current inspection for cracking and repair, which would end the inspections.

- Service Bulletin 84-54-21, dated May 9, 2013. This service information describes procedures for rework of the LH side and RH side nacelle A-frame structure, including a measurement of the clearance between the fasteners/A-frame structure and MLG stabilizer brace assembly and to make sure no fouling condition exists, and repair.

Goodrich has issued the following service information.

- Service Bulletin 46400-32-102 R2, Revision 2, dated February 17, 2015. This service information describes procedures for installing new stop brackets and new stop shims for all MLG stabilizer brace assemblies.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

### **Costs of Compliance**

We estimate that this AD affects 80 airplanes of U.S. registry.

We also estimate that it takes up to 50 work-hours per product to comply with the basic requirements of this AD. The average labor rate is \$85 per work-hour. Required parts will cost \$8,452 per product. Based on these figures, we estimate the cost of this AD on U.S. operators to be up to \$1,016,160, or \$12,702 per product.

We have received no definitive data that would enable us to provide cost estimates for the on-condition actions specified in this AD.

### **Authority for this Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. "Subtitle VII: Aviation Programs," describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in "Subtitle VII, Part A, Subpart III, Section 44701: General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by

prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

### **Regulatory Findings**

We determined that this AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

1. Is not a “significant regulatory action” under Executive Order 12866;
2. Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979);
3. Will not affect intrastate aviation in Alaska; and
4. Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

### **Adoption of the Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

## **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

**2016-16-15 Bombardier, Inc.:** Amendment 39-18613; Docket No. FAA-2015-3986; Directorate Identifier 2015-NM-057-AD.

#### **(a) Effective Date**

This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

#### **(b) Affected ADs**

None.

#### **(c) Applicability**

This AD applies to Bombardier, Inc. Model DHC-8-400, -401, and -402 airplanes, certificated in any category, serial numbers (S/Ns) 4001 through 4431 inclusive.

#### **(d) Subject**

Air Transport Association (ATA) of America Code 32, Landing Gear.

#### **(e) Reason**

This AD was prompted by reports of chafing damage due to insufficient clearance on the main landing gear (MLG) stabilizer brace, the nacelle A-frame structure, and the adjacent electrical wiring harnesses. An insufficient fillet radius might also exist on

certain airplanes. We are issuing this AD to detect and correct chafing damage and subsequent premature cracking and fracture of the nacelle A-frame structure, which could result in failure of the MLG stabilizer brace and loss of the MLG down-lock indication, which could adversely affect the safe landing of the airplane.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Inspection, Corrective Actions, and Rework**

For airplanes having S/Ns 4001 through 4055 inclusive: Do the actions required by paragraphs (g)(1) and (g)(2) of this AD.

(1) Within 600 flight hours or 100 days after the effective date of this AD, whichever occurs first: Do a detailed inspection of the left-hand (LH) side and right-hand (RH) side nacelle A-frame structure for insufficient fillet radius, in accordance with “Part A – Inspection” of the Accomplishment Instructions of Bombardier Service Bulletin 84-54-19, dated April 18, 2013. If an insufficient fillet radius exists, before further flight, do an eddy current or fluorescent dye penetrant inspection for cracking, in accordance with “Part A – Inspection” of the Accomplishment Instructions of Bombardier Service Bulletin 84-54-19, dated April 18, 2013.

(i) If any cracking is found: Before further flight, repair using a method approved by the Manager, New York Aircraft Certification Office (ACO), ANE-170, FAA; or Transport Canada Civil Aviation (TCCA); or Bombardier, Inc.’s TCCA Design Approval Organization (DAO).

(ii) If no cracking is found: Before further flight, rework the structure, in accordance with “Part B – Rectification” of the Accomplishment Instructions of Bombardier Service Bulletin 84-54-19, dated April 18, 2013.

(2) Within 6,000 flight hours or 36 months after the effective date of this AD, whichever occurs first: Rework the LH side and RH side nacelle A-frame structure, including doing a measurement of the clearance between the fasteners/A-frame structure and MLG stabilizer brace assembly and making sure no fouling condition exists, in accordance with paragraph 3.B., “Procedure,” of the Accomplishment Instructions of Bombardier Service Bulletin 84-54-21, dated May 9, 2013. If the clearance is found to be less than 0.100 inch (2.54 millimeters (mm)) between the fasteners/A-frame structure and MLG stabilizer brace assembly after the rework is done, or a fouling condition exists during the extension of the MLG after rework is done, before further flight, repair using a method approved by the Manager, New York ACO, ANE-170, FAA; or TCCA; or Bombardier, Inc.’s TCCA DAO.

**(h) Repetitive Inspections and Corrective Actions**

For airplanes having S/Ns 4056 through 4426 inclusive: Within 600 flight hours or 100 days after the effective date of this AD, whichever occurs first, do a detailed inspection of the LH side and RH side nacelle A-frame structure and upper surface of the MLG stabilizer brace for insufficient clearance and damage (e.g., cracking), in accordance with “Part A – Inspection” of the Accomplishment Instructions of Bombardier Service Bulletin 84-54-20, Revision C, dated March 5, 2015. If no damage is found and clearance is sufficient: Repeat the inspection thereafter at intervals not to

exceed 600 flight hours until the terminating action required by paragraph (i) of this AD has been done.

(1) If a clearance less than 0.100 inch (2.54 mm) exists between the A-frame structure and the MLG stabilizer brace assembly in the retracted position, after the rework is done, before further flight, repair using a method approved by the Manager, New York ACO, ANE-170, FAA; or TCCA; or Bombardier, Inc.'s TCCA DAO.

(2) If any damage is found: Before further flight, repair using a method approved by the Manager, New York ACO, ANE-170, FAA; or TCCA; or Bombardier, Inc.'s TCCA DAO.

**(i) Terminating Action for Certain Airplanes**

For airplanes having S/Ns 4056 through 4426 inclusive: Within 6,000 flight hours or 36 months after the effective date of this AD, whichever occurs first, rework the LH side and RH side nacelle A-frame structure, including doing a measurement of the clearance between the A-frame structure and MLG stabilizer brace assembly and doing a fluorescent dye penetrant inspection or high frequency eddy current inspection for cracking, in accordance with "Part B – Rework" of the Accomplishment Instructions of Bombardier Service Bulletin 84-54-20, Revision C, dated March 5, 2015.

Accomplishment of the actions required by this paragraph terminates the repetitive inspections required by paragraph (h) of this AD.

(1) If a clearance less than 0.100 inch (2.54 mm) exists between the A-frame structure and the MLG stabilizer brace assembly in the retracted position, after the



rework is done, before further flight, repair using a method approved by the Manager, New York ACO, ANE-170, FAA; or TCCA; or Bombardier, Inc.'s TCCA DAO.

(2) If any cracking is found: Before further flight, repair using a method approved by the Manager, New York ACO, ANE-170, FAA; or TCCA; or Bombardier, Inc.'s TCCA DAO.

**(j) Modification of MLG Stabilizer Brace Assembly**

For airplanes having S/Ns 4001 through 4431 inclusive with a MLG stabilizer brace assembly having part number (P/N) 46400-27 installed: Within 6,000 flight hours or 36 months after the effective date of this AD, whichever occurs first, incorporate Bombardier ModSum 4-902416 by installing new stop brackets and a new shim on each MLG stabilizer brace assembly, in accordance with paragraph 3.B., "Procedure," of the Accomplishment Instructions of Bombardier Service Bulletin 84-32-112, Revision C, dated April 2, 2015; and Goodrich Service Bulletin 46400-32-102 R2, Revision 2, dated February 17, 2015.

**(k) Rework of the Electrical Wiring Harnesses**

For airplanes having S/Ns 4001 through 4411 inclusive: Within 6,000 flight hours or 36 months after the effective date of this AD, whichever occurs first, rework the LH and RH sides of the electrical wiring harnesses in the nacelle area adjacent to the A-frame structure, including doing the actions specified in paragraphs (k)(1) through (k)(4) of this AD, in accordance with "Part B – Procedure" of the Accomplishment Instructions of Bombardier Service Bulletin 84-32-114, Revision B, dated February 3, 2015. If any damage is found on the A-frame structure or MLG stabilizer brace, before

further flight, repair using a method approved by the Manager, New York ACO, ANE-170, FAA; or TCCA; or Bombardier, Inc.'s TCCA DAO.

(1) Doing a detailed inspection of the conduit assembly for the conditions specified in Bombardier Service Bulletin 84-32-114, Revision B, dated February 3, 2015, and, before further flight, repairing if any condition is found.

(2) Replacing damaged conduit.

(3) Measuring the clearance between the stabilizer brace and electrical harness on both LH and RH nacelles to make sure there is 0.100 inch (2.54 mm) minimum clearance between the MLG stabilizer brace.

(4) Checking for damage on the A-frame structure and MLG stabilizer brace.

**(I) Optional Installations**

(1) Installing specified fasteners on the MLG A-frame, in both LH and RH nacelles, in accordance with Bombardier ModSum IS4Q5450002, Revision B, dated June 22, 2012, is acceptable for compliance with the actions specified in paragraph (g)(2) of this AD, provided the actions specified in Bombardier ModSum IS4Q5450002 are done within the applicable compliance time specified in paragraph (g) of this AD, except where ModSum IS4Q5450002, Revision B, dated June 22, 2012, specifies to contact Bombardier for reduced clearances, before further flight, repair using a method approved by the Manager, New York ACO, ANE-170, FAA; or TCCA; or Bombardier, Inc.'s TCCA DAO.

(2) Trimming the horizontal and vertical stiffeners on the MLG A-frame in both LH and RH nacelles, in accordance with Bombardier ModSum IS4Q5450003, Revision

C, dated November 29, 2012, is acceptable for compliance with the actions specified in paragraph (i) of this AD, provided the actions specified in Bombardier ModSum IS4Q5450003 are done within the compliance time specified in paragraph (i) of this AD, except where ModSum IS4Q5450003, Revision C, released November 29, 2012, specifies to contact Bombardier for reduced clearances, before further flight, repair using a method approved by the Manager, New York ACO, ANE-170, FAA; or TCCA; or Bombardier, Inc.'s TCCA DAO.

(3) Rerouting certain electrical harnesses and installing grommets, in accordance with Bombardier ModSum IS4Q2400028, Revision B, dated December 11, 2012 (for S/Ns 4001 through 4098 inclusive); or Bombardier ModSum IS4Q2400029, Revision A, dated July 6, 2012 (for S/Ns 4090 through 4411 inclusive); is acceptable for compliance with the actions specified in paragraph (k) of this AD, provided the actions specified in the applicable modsum are done within the compliance time specified in paragraph (k) of this AD, except where Bombardier ModSum IS4Q2400028, Revision B, dated December 11, 2012; and Bombardier ModSum IS4Q2400029, Revision A, dated July 6, 2012; specify to contact Bombardier to report stabilizer brace or structural damaged findings, before further flight, repair using a method approved by the Manager, New York ACO, ANE-170, FAA; or TCCA; or Bombardier, Inc.'s TCCA DAO.

**(m) Credit for Previous Actions**

(1) This paragraph provides credit for actions required by paragraph (i) of this AD, if those actions were performed before the effective date of this AD using the

applicable service information specified in paragraph (m)(1)(i), (m)(1)(ii), or (m)(1)(iii) of this AD. This service information is not incorporated by reference in this AD.

(i) Bombardier Service Bulletin 84-54-20, dated April 25, 2013.

(ii) Bombardier Service Bulletin 84-54-20, Revision A, dated April 9, 2014.

(iii) Bombardier Service Bulletin 84-54-20, Revision B, dated October 2, 2014.

(2) This paragraph provides credit for actions required by paragraph (j) of this AD, if those actions were performed before the effective date of this AD using the applicable service information specified in paragraph (m)(2)(i), (m)(2)(ii), (m)(2)(iii), or (m)(2)(iv) of this AD. This service information is not incorporated by reference in this AD.

(i) Bombardier Service Bulletin 84-32-112, dated December 20, 2012.

(ii) Bombardier Service Bulletin 84-32-112, Revision A, dated April 16, 2014.

(iii) Bombardier Service Bulletin 84-32-112, Revision B, dated September 12, 2014.

(iv) Goodrich Service Bulletin 46400-32-102 R1, Revision 1, dated June 24, 2013.

(3) This paragraph provides credit for actions required by paragraph (k) of this AD, if those actions were performed before the effective date of this AD using the applicable service information specified in paragraph (m)(3)(i) or (m)(3)(ii) of this AD. This service information is not incorporated by reference in this AD.

(i) Bombardier Service Bulletin 84-32-114, dated June 6, 2013.

(ii) Bombardier Service Bulletin 84-32-114, Revision A, dated September 18, 2013.

**(n) Other FAA AD Provisions**

The following provisions also apply to this AD:

**(1) Alternative Methods of Compliance (AMOCs):** The Manager, New York ACO, ANE-170, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the ACO, send it to ATTN: Program Manager, Continuing Operational Safety, FAA, New York ACO, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516-228-7300; fax 516-794-5531. Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

**(2) Contacting the Manufacturer:** For any requirement in this AD to obtain corrective actions from a manufacturer, the action must be accomplished using a method approved by the Manager, New York ACO, ANE-170, FAA; or TCCA; or Bombardier, Inc.'s TCCA DAO. If approved by the DAO, the approval must include the DAO-authorized signature.

**(o) Related Information**

(1) Refer to Mandatory Continuing Airworthiness Information (MCAI) Canadian Airworthiness Directive CF-2014-45, dated December 23, 2014, for related information.

This MCAI may be found in the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2015-3986.

(2) Service information identified in this AD that is not incorporated by reference is available at the addresses specified in paragraphs (p)(3), (p)(4), and (p)(5) of this AD.

**(p) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless this AD specifies otherwise.

(i) Bombardier ModSum IS4Q2400028, Revision B, dated December 11, 2012.  
(This document has 33 pages; the first page of the modsum indicates that there are 32 pages.)

(ii) Bombardier ModSum IS4Q2400029, Revision A, dated July 6, 2012.

(iii) Bombardier ModSum IS4Q5450002, Revision B, dated June 22, 2012.

(iv) Bombardier ModSum IS4Q5450003, Revision C, dated November 29, 2012.

(v) Bombardier Service Bulletin 84-32-112, Revision C, dated April 2, 2015.

(vi) Bombardier Service Bulletin 84-32-114, Revision B, dated February 3, 2015.

(vii) Bombardier Service Bulletin 84-54-19, dated April 18, 2013.

(viii) Bombardier Service Bulletin 84-54-20, Revision C, dated March 5, 2015.

(ix) Bombardier Service Bulletin 84-54-21, dated May 9, 2013.

(x) Goodrich Service Bulletin 46400-32-102 R2, Revision 2, dated February 17, 2015.

(3) For Bombardier service information identified in this AD, contact Bombardier, Inc., Q-Series Technical Help Desk, 123 Garratt Boulevard, Toronto, Ontario M3K 1Y5, Canada; telephone 416-375-4000; fax 416-375-4539; email [thd.qseries@aero.bombardier.com](mailto:thd.qseries@aero.bombardier.com); Internet <http://www.bombardier.com>.

(4) For Goodrich service information identified in this AD, contact Goodrich Corporation, Landing Gear, 1400 South Service Road, West Oakville, ON, Canada L6L 5Y7; phone: 905-825-1568; email: [jean.breed@goodrich.com](mailto:jean.breed@goodrich.com); Internet: <http://www.goodrich.com/TechPubs>.

(5) You may view this service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221.

(6) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to:  
<http://www.archives.gov/federal-register/cfr/ibr-locations.html>.  
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